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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,678	12/11/2003	Jung-Hyun Kim	8045-45 (PX1601-US/SSD)	8949
22150 7590 11/07/2008 F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797				
EXAMINER				
CHRISS, ANDREW W				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/733,678

**Applicant(s)**

KIM, JUNG-HYUN

**Examiner**

Andrew Chriss

**Art Unit**

2419

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 July 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-24 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12/11/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/CDC)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendment, filed July 17, 2008, has been entered and carefully considered. Claims 1, 11, 21, 23, and 24 are amended, and Claims 1-24 are currently pending.
2. Objection to Claims 1, 11, 21, 23, and 24 is withdrawn in light of Applicant's amendment.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 1, 11, 21, 23, and 24** rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The claim language cites "wherein the packet identifiers stored in each respective table are directed to the same output port" and "wherein the cell identifiers stored in each respective table are directed to the same output port." However, Applicant's specification describes a switching operation for multicast packets or cells, wherein "one input port can be simultaneously connected with multiple output ports based on the multicast identifier. The multicast identifier appears in the lookup tables corresponding to those output ports to which the identifier is directed" (page 11, lines 10-14). Further, the lookup tables shown in Figures 5 and 6

depict lookup tables for each output port, wherein the lookup tables comprise inbound identifiers corresponding to input ports and outbound identifiers corresponding to output ports (Figures 5 and 6, tables 60-63). As stated in Applicant's specification, "the identifier 15 appears in lookup tables 60 and 61 corresponding to first *and* second output ports" (emphasis added) (page 11, lines 14-16). Therefore, the newly added claim limitation that the packet/cell identifiers stored in each respective table are directed to the *same output port* constitutes new matter (emphasis added).

***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. **Claims 1-24** rejected under 35 U.S.C. 103(a) as being unpatentable over Milway (United States Patent 6,122,279) in view of Takatori et al (United States Patent 5,473,598), hereinafter Takatori, and Takano et al (United States Patent 5,600,630), hereinafter Takano.

Applicant claims a method of switching packets and a method of switching cells. For purposes of examination, Examiner asserts that prior art teaching a method of switching cells also teaches a method of switching packets.

**Regarding Claims 1, 11, and 23**, Milway teaches a method of switching cells (and thereby, packets) by a switch controller (column 11, lines 8-9). Milway teaches storing a plurality of input port designations in a routing table, by reading the port's identifying number, which corresponds to at least one input port, within the cell header (column 4, lines 27-29). Milway also teaches hashing a routing identifier (equivalent to Applicant's claimed packet/cell

identifier), in combination with the port's identifying number (equivalent to Applicant's input port designation) to place in the routing table, thus storing a plurality of packet/cell identifiers being stored in each routing table (column 4, line 26). Milway further teaches that ports contain received cells in their buffers, thus having inputted at least one packet into an input port of the plurality of input ports (column 4, lines 20-22). Control logic in all ports will read the old header and routing tag simultaneously with the switch controller (column 4, lines 32-34), thus locating a packet/cell identifier from the plurality of packet/cell identifiers stored in each table that matches the packet/cell identifier of the at least one packet. Lastly, Milway teaches that the routing tag specifies which output ports should receive the cell (column 4, lines 31-32). In order to connect an input port with the one or more output ports, Milway teaches that the switch controller issues a cell copy command causing the input port to place the information payload of the current cell onto the switch bus where it will be read by the selected output ports (column 4, lines 35-39). However, Milway does not expressly disclose a plurality of tables, each of which corresponds to one output port of a plurality of output ports, the one output port being the only destination port for the table. In the same field of endeavor, Takatori discloses an ATM switch comprising multiple routing tables (Figure 1, 5-1 – 5-4), wherein each routing table stores different routing information (column 3, lines 10-17), and further wherein each of the plurality of routing tables indicates an output port of an ATM switch (column 4, lines 62-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the plurality of routing tables disclosed in Takatori with the switching device disclosed in Milway in order to perform switching of routing tables and VPI/VCI conversion tables without causing an interrupt in the event that a routing request of an incoming cell does not match stored routing information.

However, the aforementioned references do not expressly disclose simultaneously searching each table for the packet identifier of the at least one packet. In the same field of endeavor, Takano discloses simultaneously reading contents from multiple routing tables in an ATM switch (column 7, lines 48-57; column 8, lines 45-52; Figures 2 and 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the simultaneous table search/read disclosed in Takano with the switching device disclosed in Milway, as modified above, in order to reduce the time required for path switchover in the event of a path failure.

**Regarding Claims 2 and 12,** Milway further teaches that the switch controller reads a routing identifier (packet/cell identifier) with the input port's identifying number (column 13, lines 19-25), thus having the packet/cell identifier stored in each table identifying an input port of the plurality of input ports.

**Regarding Claims 3 and 13,** Milway further teaches the packet/cell identifier stored in the routing table contains Route Words and corresponding New Header Words for each output port 210 (column 19, lines 40-42), thus having a packet/cell identifier stored in the routing table that identifies an output port in the plurality of output ports.

**Regarding Claims 4 and 14,** Milway further teaches that the switch controller reads a routing identifier (packet/cell identifier) with the port's identifying number (column 4, line 26), thus having the packet/cell identifier stored in each table identifies an input port of the plurality of input ports.

**Regarding Claims 5 and 15,** Milway further teaches the packet/cell identifier stored in the routing table contains Route Words and corresponding New Header Words for each output

port 210 (column 19, lines 40-42), thus having the packet/cell identifier identifying an output port of the plurality of ports.

**Regarding Claims 6 and 16,** Milway further teaches a multicast switching operation wherein “the Route Word 540 read after the first hashing operation has been performed will have its SWITCH COMMAND field 870 set to Indirect...The Indirect command indicates to switch controller 120 that the subsequent word is not a typical New Header Word 550 containing an ATM cell header, but rather an index to an auxiliary portion of routing table 720 which contains the Route Words 540 and corresponding New Header Words 550 for each output port 210-j involved in the current multicast transmission” (column 19, lines 34-47). Thus, the packet/cell identifier, which is stored in routing table 720, identifies a multicast packet.

**Regarding Claims 7 and 17,** see rejection of Claims 6 and 16 above.

**Regarding Claims 8 and 18,** Milway further teaches that the routing table 720 is stored in DRAM memory (column 13, lines 45-46), which is a type of semiconductor memory, as cited in Applicant’s specification (page 9, line 24 – page 10, line 1).

**Regarding Claims 9 and 19,** Milway further teaches storing the cell identifier and the input port designation together as one datum (a routing index), shown in Figures 6A and 6B.

**Regarding Claims 10 and 20,** Milway further teaches the packet/cell identifier stored in the routing table contains Route Words and corresponding New Header Words for each output port 210 (column 19, lines 40-42). Milway also teaches control logic in all ports read the old header and routing tag simultaneously with the switch controller (column 4, lines 32-34), thus determining an output port based on each table storing the located packet identifier.

**Regarding Claim 21**, Milway teaches a switching apparatus comprising a plurality of input ports (Figure 1, 150-1); a plurality of output ports (column 4, line 34); a plurality of routing tables (column 4, lines 7-8), which store a plurality of routing identifiers (equivalent to Applicant's claimed packet/cell identifier) and port identifying number (equivalent to Applicant's input port designation) (column 4, line 26), and a switch controller 120 (equivalent to Applicant's claimed switching control unit), which issues a cell copy command causing the input port to place the information payload of the current cell onto the switch bus where it will be read by the selected output ports (column 4, lines 35-39). However, Milway does not expressly disclose a plurality of tables, each of which corresponds to one output port of a plurality of output ports, the one output port being the only destination port for the table. In the same field of endeavor, Takatori discloses an ATM switch comprising multiple routing tables (Figure 1, 5-1 – 5-4), wherein each routing table stores different routing information (column 3, lines 10-17), and further wherein each of the plurality of routing tables indicates an output port of *an* ATM switch (column 4, lines 62-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the plurality of routing tables disclosed in Takatori with the switching device disclosed in Milway in order to perform switching of routing tables and VPI/VCI conversion tables without causing an interrupt in the event that a routing request of an incoming cell does not match stored routing information. However, the aforementioned references do not expressly disclose simultaneously searching each table for the packet identifier of the at least one packet. In the same field of endeavor, Takano discloses simultaneously reading contents from multiple routing tables in an ATM switch (column 7, lines 48-57; column 8, lines 45-52; Figures 2 and 8). It would have been obvious to one of ordinary skill in the art at



the time the invention was made to combine the simultaneous table search/read disclosed in Takano with the switching device disclosed in Milway, as modified above, in order to reduce the time required for path switchover in the event of a path failure.

**Regarding Claim 22**, Milway teaches a switch controller that issues a cell copy command causing the input port to place the information payload of the current cell onto the switch bus where it will be read by the selected output ports (column 4, lines 35-39), thus connecting the input port corresponding to the input port designation stored with the packet identifier of the at least one packet with the at least one output port.

**Regarding Claim 24**, Milway teaches a switching device for switching ATM cells (packets) (column 4, lines 2-3), which is a program storage device, containing system software (column 4, line 9) to execute the claimed method (see rejection of Claims 1, 11, and 23 above). However, Milway does not expressly disclose a plurality of tables, each of which corresponds to one output port of a plurality of output ports, the one output port being the only destination port for the table. In the same field of endeavor, Takatori discloses an ATM switch comprising multiple routing tables (Figure 1, 5-1 – 5-4), wherein each routing table stores different routing information (column 3, lines 10-17), and further wherein each of the plurality of routing tables indicates an output port of *an* ATM switch (column 4, lines 62-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the plurality of routing tables disclosed in Takatori with the switching device disclosed in Milway in order to perform switching of routing tables and VPI/VCI conversion tables without causing an interrupt in the event that a routing request of an incoming cell does not match stored routing information. However, the aforementioned references do not expressly disclose simultaneously searching

each table for the packet identifier of the at least one packet. In the same field of endeavor, Takano discloses simultaneously reading contents from multiple routing tables in an ATM switch (column 7, lines 48-57; column 8, lines 45-52; Figures 2 and 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the simultaneous table search/read disclosed in Takano with the switching device disclosed in Milway, as modified above, in order to reduce the time required for path switchover in the event of a path failure.

#### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new grounds of rejection.

#### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Chriss whose telephone number is (571)272-1774. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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